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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of :

Thomas NOSKER et al.

Serial No.: 09/985,937

Filed: November 6, 2001

For: ENGINEERED RAILROAD TIES



Group Art Unit 3617

Examiner: M. T. Le

BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192

Honorable Commissioner for Patents
and Trademarks

Sir:

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Further to the Notice of Appeal filed June 26, 2003, attached herewith are three copies of Appellants' Brief on Appeal. The attached check includes the \$160.00 fee for the filing of this Brief and the \$205.00 fee for a two month extension of time.

This is an appeal from the decision of the Examiner finally rejecting claims 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34.

(1) REAL PARTY IN INTEREST

The application is assigned of record to Polywood Inc., who is the real party in interest herein. The assignment is recorded in Reel 012512/Frame 0705.

(2) RELATED APPEALS AND INTERFERENCES

Appellants, their legal representative and the assignee are not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

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(3) STATUS OF THE CLAIMS

Claims rejected: 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34

Claims allowed: 21

Claims canceled: 2, 5, 6, 7, 10-12, and 22

Claims withdrawn: none

Claims objected to: 23 and 26.

Claims on Appeal: 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34. A copy of the claims on appeal is provided in the attached Appendix.

(4) STATUS OF AMENDMENTS AFTER FINAL

Subsequent to the Final Rejection in the Office Action of December 26, 2002, Appellants filed a Amendment under 37 CFR §1.116 on May 27, 2003. In an Advisory Action issued June 20, 2003, the Examiner indicated that the amendments would be entered, but the rejections as to claims 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34 were maintained. No further amendments have been submitted.

(5) SUMMARY OF THE INVENTION

Appellants' invention involves providing plastic or plastic composite ties with means to increase the resistance of the ties to sliding within the ballast of the railroad bed, for example, sliding lengthwise (in the direction of the longitudinal axis of the tie) and/or sideways (in the direction perpendicular to the longitudinal axis, i.e., in the direction of the latitudinal axis). The plastic and/or plastic composite ties are provided with a textured surface which aids in anchoring the ties within the ballast of the railroad beds.

In particular, the ties are provided with a pattern of indentations within a surface that contacts the ballast. This pattern of indentations increases the ties resistance to sliding, especially in the direction along the longitudinal axis. These indentations are designed to inhibit such sliding while minimizing stress within the ties so as to avoid stress raisers. The indentations have a depth of at least 1/8 of an inch (e.g. 1/8 to 1 inch) and the indentations are inclined at an angle of less than 90°. In addition, the indentations are

concave shapes which are either (a) in the form of truncated cones in which the sides of the truncated cone shapes are at an angle of 30-60 degrees with respect to at least one longitudinal side, or (b) in the form of truncated pyramidal shapes in which the sides of the truncated pyramidal shapes are at an angle of 30-60 degrees with respect to at least one longitudinal side.

The invention further relates to methods of maintaining desired spacing between railroad rails and methods of providing a weight bearing support surface for railroad rails utilizing the ties of the invention. See also the claims in the Appendix.

(6) ISSUES

The issues on Appeal are:

(1) whether claims 24-25 of the application are patentable under 35 U.S.C. §102(b) as being anticipated in view of the disclosure of Garber (US 1,297,828); and

(2) whether claims 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34 of the application are patentable under 35 U.S.C. §103 as being obvious in view of the disclosure of Nosker et al. (US 5,916,932) in combination with the disclosure of Reis (US 2,051,619).

(7) GROUPING OF THE CLAIMS

Claims 1, 3, 4, 8, 9, 13-20, and 27-34 do not stand or fall with the anticipation rejection of claims 24-25. Further, claims 3, 8, 9, 13-16, 27-28, 31, and 33-34 do not stand or fall with the rejection of claim 1. Claims 3, 8, 9, 13-16, 27-29, 31, and 33-34 are argued separately below.

(8) APPELLANTS' ARGUMENTS

Rejection under 35 USC §102 in view of Garber

Claims 24 and 25 are rejected as allegedly being anticipated in view of Garber (US 1,297,828). Appellants request that this rejection be reversed.

Claims 24 and 25 are both Jepson claims that are each dependent from claim 1. Specifically, the "improvement" recited in method Jepson claims is the use of a tie according

to claim 1. **Yet, claim 1 is not rejected as being anticipated in view of Garber.** Claim 1 was previously so rejected, but this rejection has been withdrawn.

Since the Examiner has acknowledged that the tie of claim 1 is not described by Garber, i.e., not anticipated by Garber, it is self-evident that Garber does not describe or anticipate the use of any tie having all the features of claim 1. As a result, it is also self-evident that claims 24 and 25 are clearly not anticipated by Garber.

To establish anticipation, the prior art reference must teach explicitly or inherently every feature of the claimed invention. Moreover, in making an anticipation rejection, an examiner must show where each and every feature of the claimed invention is described in the allegedly anticipatory reference. See, e.g., *Ex parte Levy*, 17 USPQ2d 1461, 1462 (BOPA 1990) ["Moreover, it is incumbent upon the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. "] The rejection clearly does not satisfy this requirement, and thus should be reversed for this reason alone.

In any event, Garber discloses a railroad tie having a concrete cover 11, in which is embedded a corrugated metal casing 1, and a filler 9 which is made wood, compressed pulp, or other fibrous material into which spikes can be driven (see lines 42-44 and 61-64). The bottom surface of the filler 9 is provided with concavities. See Figures 2 and 3.

Garber does not disclose, for example, concave shapes having a depth of at least 1/8 of an inch and having sidewalls which are at an angle of less than 90°. Garber also does not disclose a tie made from polymeric material. Garber also does not disclose concave shapes that are in the form of truncated cones in which the sides of the truncated cone shapes are at an angle of 30-60 degrees. Garber further does not disclose concave shapes that are truncated pyramidal shapes in which the sides of the truncated pyramidal shapes are at an angle of 30-60 degrees. Due to the failure of Garber to disclose any or all of these features, the rejection should be reversed.

In the Office Action of December 16, 2003, the Examiner asserts, with no justification, that the features of claim 1 are "not considered patentably significant in defining the instant claimed step of the instant method over the prior art." The assertion that the features recited in claim 1 can be ignored is incorrect and not supported by any case law, statute, or Rule. Nor is there any rationale or authority cited in the rejection for the Examiner to consider some claim features to be significant, and others not. The Examiner can not arbitrarily decide that some

claim features can simply be ignored. This is especially true when the features involved are those which are the "improvement" recited in a Jepson claim. All features recited within a claim must be considered. See, e.g., *In re Angstadt et al.*, 190 USPQ 214 (CCPA 1976).

In view of the above remarks, it is respectfully submitted that Garber fails to anticipate appellants' invention. Reversal of the rejection is respectfully requested.

Rejection under 35 USC §103 in view of Nosker et al. and Reis

Claims 1, 3, 4, 8-9, 13-20, 24-25, and 27-34 are rejected as allegedly being obvious in view of Nosker et al. (US 5,916,932) in combination with Reis (US 2,051,619).

Nosker et al. disclose a building composite material which comprises a polymer component and a coated fiber component, which is distributed within the polymer component. The polymer component which makes up at least 20 wt% of the composite is made of about 80-100 wt% high density polyethylene. See column 2, lines 24-39. The composite is characterized as a wood substitute which can be formed into lumber, railroad ties, telephone poles, guard rail poles, and can be used in the construction of piers and boardwalks. See column 4, lines 32-39. Nosker et al. does not disclose or suggest the use of concavities in plastic composite rail road ties or how to make such concavities.

Reis discloses a composite **concrete** railroad tie having two tie bodies that engage one another using a tongue 11 and groove 10 arrangement. See Figure 1 and column 3, lines 5-13. The composite tie is designed to provide "a resiliently flexible, or yieldable track construction." See column 1, lines 3-14. The tie is intended to provide a degree of "yieldness" which improves traffic condition and absorbs shocks and vibrations. See column 1, lines 46-53.

Only one end of each tie body is fastened to a rail. The other end of each tie body has an upwardly inclined bottom surface 6. Thus, the sloped end of the tie is free to move relative to the rail resting thereon. See column 2, lines 39-45 and column 3, lines 48-58. In other words, the tie bodies are designed to move relative the rails.

In the rejection, reference is made to recesses 9 of the Reis tie. As shown in Figures 2 and 3, the bottom surface of each tie body is provided with recesses 9 "for greater grip of the body to the foundation, or road bed." This gripping is said to be due to a "suction effect" caused by the recesses. See column 2, lines 46-51. Moreover, regardless of the function of

the recesses, the overall tie construction is designed to permit movement.

Reis makes no suggestion of using recesses in polymeric ties. It is noted that concrete ties weigh considerably more than plastic ties. Nothing within the disclosure of Reis or Nosker et al suggests that such a “suction effect” can be achieved by putting recesses in the surface of the much lighter plastic ties.

In the rejection, reference is made to “minor dimension and shape variations.” However, no explanation is provided as to what is meant by minor, or why appellants’ claimed structures are considered minor variations. It is noted that Reis provides no description of the angle of inclination and there is nothing within the disclosure of Reis to suggest that the drawings are drawn to scale. In situations where a reference does not disclose that the drawings presented therein are drawn to scale and is silent regarding dimensions, one can not rely on the drawings to show precise dimensions. See, e.g., *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000) [“[I]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.”]. See also MPEP §2125.

Further, the rejection sets for no basis for asserting that certain features are minor or insignificant. All features recited in a claim must be considered. See, e.g., *In re Angstadt et al.*, 190 USPQ 214 (CCPA 1976). The rejection also does not indicate how “common knowledge” would lead one to modify the cone/pyramid angle within a given range or arrive at the claimed angle.

The rejection alleges that the dimensions/sizes recited in appellants’ claims are mere obvious variations of the recesses of Reis. However, no rational is given in support of this conclusion. Nothing within the disclosure of Reis provides any suggestion of modifying the size, depth, arrangement, shape, or the angle of internal inclination of these recesses 9. Nor does Reis provide any suggestion that one could optimize the so-called suction effect by modifying the size, depth, arrangement, shape, or the angle of internal inclination of these recesses 9. For example, Reis does not suggest what factors one would adjust to affect gripping of the rail road bed or what ranges one would use for selecting, for example, the diameter, depth, or angle of inclination for the recesses 9 (especially in the case of polymeric ties as opposed to concrete ties). In fact, Reis does not disclose any values for the depth, size,

and/or angle of inclination for recesses 9 of its concrete ties.

Thus, Reis does not disclose an angle of inclination for the internal walls of its recesses 9. Nor does Reis suggest that this angle should be manipulated to impact the so-called suction effect. Further, Reis is devoid of any suggestion as to modifying the angle of inclination used in recesses on a surface of a polymeric tie.

The rejection alleges that it would be “a matter of common knowledge” for one skilled in the art to make concave shapes in the tie of Nosker et al. This again is a conclusion; no support is provided for this allegation of common knowledge. The rejection also does not indicate how “common knowledge” would lead one to modify the cone/pyramid angle within a given range or arrive at the claimed angle range. The rejection presents no rational as to why one would make such recesses in lighter plastic ties. Moreover, nothing in the rejection indicates why “common knowledge” leads one to provide structures in accordance with appellants’ claimed invention, structures which are neither described nor suggested by either prior art reference.

In the rejection, reference is made to MPEP 2144.04, IV(A), (B), with regards to how to treat allegedly obvious changes in shapes and designs. However, this is not a matter of mere scaling up. Further, the rejection presents no rational as to why the recesses used in a concrete tie would perform the same in a plastic tie. Nor is there any rational as to why the designs/arrangements of the recesses recited in appellants’ claims when used in a plastic tie will function the same as the recesses used by Reis in concrete ties.

In view of the above remarks, it is respectfully submitted that Nosker et al., taken alone or in combination with Reis, fails to render obvious appellants’ claimed invention. Reversal of the rejection is respectfully requested.

To further demonstrate the non-obvious character of appellants’ invention, appellants’ filed a Rule 132 Declaration by one of the inventors, Thomas J. Nosker, concerning the designs of other polymeric ties. The Examiner has made no comments on this Declaration. The Declaration describes the failures and disadvantages associated with other types of patterns on railroad ties, further demonstrating the non-obvious character of the claimed invention.

Claims 3, 8, 13, 15, 27, 29, 31, and 33

The recesses of Reis relied on in the rejection are identified reference numeral 9. See figures 2 and 3. The bottom surface of the rail also has circular shaped recesses 5. These recesses are involved with the attachment of the concrete ties to the rails. Thus, above recess 5 this embedded in the concrete tie a plate 2. Above the plate 2 there is provided a vertical opening 4. The recess 5 accommodates the head of a bolt 14 which passes through the plate 2, the vertical opening 4, and clamp plate 13 and secured with a nut 15.

Thus, the recesses 5 of Reis are directed towards accommodating a bolt for attaching the rails to the concrete ties. Reis make no suggestion that such recesses are used to provide greater grip of the body to the foundation, or road bed, or to provide any "suction effect." Nothing within the disclosure of Reis or Nosker et al. would motivate one of ordinary skill in the art to modify the polymeric ties so as to provide such recesses which are designed for attaching concrete ties to rails. Thus, neither Reis nor Nosker et al. provide any suggestion of modifying the ties of Nosker et al. to provide concave shapes in the form of truncated cones as recited in appellants' claim 3 and the claims dependent thereon. Reversal of the rejection is respectfully requested.

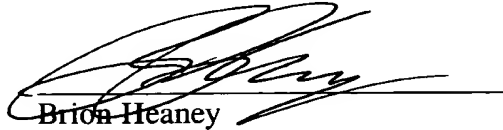
Claims 8, 9, 13, 14, 15, 16, 27, 28, 33 and 34

These claims provide further details on the dimensions and arrangements of the concave shapes recited in appellants' claims. The disclosures of Reis and Nosker et al. provide no disclosure as to the dimensions and arrangements of the recesses 9 of Reis. Nor is there any suggestion that modifying these recesses to have the dimensions and arrangements recited in appellants' claims would be beneficial to the gripping effect described by Reis. The mere ability to modify the disclosure of a reference does not, in and of itself, establish obviousness. See, e.g., *In re Laszkowski*, 10 USPQ2d 1397 (Fed. Cir. 1989). Instead, there must be some motivation demonstrated that we lead one of ordinary skill in the art to make the asserted modification. No such motivation is presented in the rejection. Reversal of the rejection is respectfully requested.

(9) CONCLUSION

For all of the above reasons, it is urged that the decision of the Examiner rejecting claims 1, 3, 4, 8, 9, 13-20, 24-25, and 27-34 is in error and should be reversed.

Respectfully submitted,


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Registration No. 32,542

Filed: September 29, 2003

APPENDIX OF CLAIMS ON APPEAL - SERIAL NO. 09/985,937

1. A railroad tie comprising:

a railroad tie having at least four longitudinal sides, two end faces and a longitudinal axis, wherein at least one longitudinal side has an arrangement of concave shapes in the surface thereof, said shapes having a depth of at least 1/8 of an inch and having sidewalls which are at an angle of less than 90°, wherein said tie is made from polymeric material, and

said concave shapes are in the form of truncated cones in which the sides of the truncated cone shapes are at an angle of 30-60 degrees with respect to said at least one longitudinal side, or said concave shapes are truncated pyramidal shapes in which the sides of the truncated pyramidal shapes are at an angle of 30-60 degrees with respect to said at least one longitudinal side.

3. A railroad tie according to claim 1, wherein said concave shapes are in the form of truncated cones.

4. A railroad tie according to claim 1, wherein said concave shapes are truncated pyramidal shapes.

8. A railroad tie according to claim 3, wherein the concave shapes at their base have a relative diameter of 3/4 - 2 inches.

9. A railroad tie according to claim 4, wherein the concave shapes at their base have a relative diameter of 3/4 - 2 inches.

13. A railroad tie according to claim 3, wherein the concave shapes have a depth of 1/4 - 1/2 inches.

14. A railroad tie according to claim 4, wherein the concave shapes have a depth of $\frac{1}{4}$ - $\frac{1}{2}$ inches.

15. A railroad tie according to claim 8, wherein the concave shapes have a depth of $\frac{1}{4}$ - $\frac{1}{2}$ inches.

16. A railroad tie according to claim 9, wherein the concave shapes have a depth of $\frac{1}{4}$ - $\frac{1}{2}$ inches.

17. A railroad tie according to claim 1, wherein said tie is formed from a material comprising a polymeric component selected from polyolefins, polystyrene, rubber and mixtures thereof, and optionally a filler component selected from fiber glass, mineral fillers, wood fibers, steel fibers and mixtures thereof.

18. A railroad tie according to claim 17, wherein said polymer component contains HDPE.

19. A railroad tie according to claim 17, wherein said tie contains: (1) HDPE and fiberglass; (2) HDPE, polystyrene and fiberglass; (3) HDPE, polypropylene and fiber glass; (4) HDPE and talc and/or gypsum; (5) HDPE, rubber, mineral filler and fiber glass; (6) HDPE, polypropylene and wood fiber; (7) HDPE and wood fiber or (8) HDPE, polystyrene, and wood fiber.

20. A railroad tie according to claim 1, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

24. In a method of maintaining desired spacing between railroad rails comprising attaching said rails to at least one railroad tie, the improvement wherein said at least one railroad tie is in accordance with claim 1.

25. In a method of providing a weight bearing support surface for railroad rails comprising attaching said rails to at least one railroad tie, the improvement wherein said at least one railroad tie is in accordance with claim 1.

27. A railroad tie according to claim 15, wherein the sides of the truncated cone shapes are at an angle of 40-50 degrees with respect to said at least one longitudinal side.

28. A railroad tie according to claim 16, wherein the sides of the truncated pyramidal shapes are at an angle of 40-50 degrees with respect to said at least one longitudinal side.

29. A railroad tie according to claim 15, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

30. A railroad tie according to claim 16, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

31. A railroad tie according to claim 27, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least

90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

32. A railroad tie according to claim 28, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

33. A railroad tie according to claim 15, wherein the distance from the center of one concave shape to the center of an adjacent concave shape is 1 ½ to 2 ½ inches.

34. A railroad tie according to claim 16, wherein the distance from the center of one concave shape to the center of an adjacent concave shape is 1 ½ to 2 ½ inches.